If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

7.1.62 Oil Injected Screw Compressors - General Maintenance for Periods of Inactivity

Text Pages 2 through 5

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

E. Quimby

7.1.62 Oil Injected Screw Compressors – General Maintenance for Periods of Inactivity

1. Purpose

General procedures for storing and maintaining oil injected screw compressors in the RHIC Cryogenics Group.

5.1 Short Term Compressor Storage (< 6 months)
5.2 Long Term Compressor Storage (> 6 months)
5.3 Short Term Operational Inactivity (< 3 months)
5.4 Long Term Operational Inactivity (> 3 months)

2. Responsibilities

2.1 The Shift Supervisor, or an Operator designated by the Shift Supervisor, is responsible for conducting the procedure and providing documentation in the Cryogenic Control Room Log.

2.2 Should a problem arise in the execution of the procedure, the Shift Supervisor shall report to the Technical Supervisor for instructions before continuing.

3. Prerequisites

3.1 The Operator shall be familiar with the specific compressor and the specific compressor Maintenance Manual.

3.2 The Operator shall be familiar with the specific compressor and able to identify the various flanged ports and plugged ports used in the required procedures.

3.3 The, Operator, shall have been instructed by his Supervisor, or other qualified member of the RHIC Cryogenics group, in the performance of each of the required procedures.

4. Precautions

4.1 Operator should be trained in LOTO procedures for locking out operational compressors in preparation for hand rotation of compressor drive shafts.

5. Procedures

5.1 SHORT TERM COMPRESSOR STORAGE (Less than 6 months)

Applies to compressors received from off site sources, and compressors removed from operational service, and put into SHORT-TERM storage.

5.1.1 For storage purposes the Howden 321mm screw compressors used for RHIC, should ideally be mounted to their original base or shipping box bottom. If removing, one of these compressors from its shipping box, save the box lid for future use. If removing one from operations, install the inlet and outlet flanges and plug all additional oil ports, then mount it on its original shipping box bottom, if available. Most of our other compressors are integrated into their own compressor skids.

5.1.2 ROTATE THE COMPRESSOR DRIVE SHAFT, BY HAND, USING A STRAP WRENCH. ROTATE APPROXIMATELY 1.5 TURNS IN THE DIRECTION THAT IT ROTATES WHEN OPERATING. FINAL SHAFT ORIENTATION, AFTER ROTATION, SHOULD BE APPROXIMATELY 180 DEGREES FROM ITS INITIAL ORIENTATION.

5.1.3 If pressurized with dry nitrogen, depressurize the compressor through the Schrader (air valve).

5.1.4 Remove and Reinstall the Schrader valve with a tee and a pressure gauge with a range of 0 to 30 psig.

5.1.5 Recharge the compressor with 15 psig of dry nitrogen using the pressure gauge.

5.1.6 Place the compressor in its proper storage location. Record in inventory records.

5.1.7 ON A WEEKLY BASIS: Rotate the compressor drive shaft as described in 5.1.2 above. Also, check and record the DATE and the READING on the pressure gauge to insure that the pressurized nitrogen is not leaking.

5.1.8 Nitrogen pressure, inside the compressor must always be maintained.

5.2 LONG TERM COMPRESSOR STORAGE (More than 6 months)

Applies to compressors received from off site sources, and compressors removed from operational service, and put into LONG-TERM storage.

5.2.1 For storage purposes the Howden 321mm screw compressors used for RHIC, should ideally be mounted to their original base or shipping box bottom. If removing, one of these compressor from its shipping box, save the box lid for future use. If removing one from operations, install the inlet and outlet flanges and plug all additional oil ports, then mount it on its original shipping box bottom, if available. Most of our other compressors are integrated into their own compressor skids.

5.2.2 Rotate the compressor drive shaft, by hand, as described in paragraph 5.1.2, above.
5.2.3 If pressurized with dry nitrogen, depressurize the compressor through the Schrader (air valve). Then, remove the Schrader valve and plug the NPT port.
5.2.4 With the compressor inlet flange removed, completely fill the compressor with UCON LB-170X compressor oil right up to the inlet flange. Check for leaks at different stage of filling. Fix all leaks.
5.2.5 Also, fill separately, the slide valve piston cylinder using the top oil ports at both ends to fill both sides of the piston.
5.2.6 When full, replace the compressor inlet flange and plug the oil ports.
5.2.7 Rotate the compressor drive shaft as described in 5.1.2 above.
5.2.8 Place the compressor in its proper storage location. Secondary oil containment may be required. Record in inventory records.
5.2.9 ON A MONTHLY BASIS: Rotate the compressor drive shaft as described in 5.1.2 above. Also, check for and fix any oil leaks.

5.3 SHORT TERM OPERATIONAL INACTIVITY (Less than 3 months)

Applies to compressors that are in operational service, but are not being used continuously.

5.3.1 RUN THE SKID OIL PUMP FOR 10 MINUTES PER WEEK.
5.3.2 ROTATE THE DRIVE SHAFT BY HAND AS DESCRIBED IN 5.1.2 ABOVE, AFTER RUNNING THE OIL PUMP.
NOTE: Remember to LOTO the compressor before hand rotating the shaft.

5.4 LONG TERM OPERATIONAL INACTIVITY (More than 3 months)

Applies to compressors that are in operational service, but are not being used continuously.

5.4.1 RUN THE SKID OIL PUMP FOR 10 MINUTES PER WEEK.
5.4.1 ROTATE THE DRIVE SHAFT BY HAND AS DESCRIBED IN 5.1.2 ABOVE, AFTER RUNNING THE OIL PUMP.
NOTE: Remember to LOTO the compressor before hand rotating the shaft.
5.4.3 RUN COMPRESSOR SKID FOR 1.0 HOURS EVERY 3 MONTHS.

6. Documentation

6.1 Compressor Service Manuals

7. References

None

8. Attachments

None